

Voluntary Corrective Action Completion Report for

Potential Release Sites, Group 1

C-00-036(a), Borrow Pit #1

C-00-036(b), Borrow Pit #2

C-00-036(c), Borrow Pit #3

C-00-036(d), Borrow Pit #4

09-010(a), Waste Container Storage Area

09-010(b), Waste Container Storage Area

Field Unit 1

Environmental
Restoration
Project

September 1995

A Department of Energy
Environmental Cleanup Program

Los Alamos
NATIONAL LABORATORY

LA-UR-96-435



6788

**LOS ALAMOS NATIONAL LABORATORY
Voluntary Corrective Action Plan Completion Reports
for Potential Release Sites, Group 1**

ICF Kaiser Engineers, Inc.
Morrison Knudsen Corporation
Job #93069-043-00

September 12, 1995

**LOS ALAMOS NATIONAL LABORATORY
Voluntary Corrective Action Plan Completion Reports
for Potential Release Sites, Group 1**

Sites under Field Unit 1 at Bandelier National Monument:

**C-00-036(a), Borrow Pit #1
C-00-036(b), Borrow Pit #2
C-00-036(c), Borrow Pit #3
C-00-036(d), Borrow Pit #4**

Sites under Field Unit 5 at TA-9, Explosives Technology Group:

**09-010(a), Waste Container Storage Area
09-010(b), Waste Container Storage Area**

**ICF Kaiser Engineers, Inc.
Morrison Knudsen Corporation
Job #93069-043-00**

September 12, 1995

Table of Contents

GROUP 1	<u>Page</u>
PRs at FU1, Bandelier National Monument	
Voluntary Corrective Action Plan Completion Report	
Potential Release Site C-00-036(a), Borrow Pit #1	1
Certification of Completion	7
Voluntary Corrective Action Plan Completion Report	
Potential Release Site C-00-036(b), Borrow Pit #2	8
Certification of Completion	14
Voluntary Corrective Action Plan Completion Report	
Potential Release Site C-00-036(c), Borrow Pit #3	15
Certification of Completion	19
Voluntary Corrective Action Plan Completion Report	
Potential Release Site C-00-036(d), Borrow Pit #4	20
Certification of Completion	24
PRs at FU5, TA-9, Explosives Technology Group	
Voluntary Corrective Action Plan Completion Report	
Potential Release Site 09-010(a), Waste Container	
Storage Area	25
Certification of Completion	28
Voluntary Corrective Action Plan Completion Report	
Potential Release Site 09-010(b), Waste Container	
Storage Area	29
Certification of Completion	32

TABLES

Table 1.	Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(a), Borrow Pit #1	3
Table 2.	Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(b), Borrow Pit #2	10
Table 3.	Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(c), Borrow Pit #3	18

FIGURES

Figure 1. Excavation and Sampling Locations for PRS C-00-036(a),
Borrow Pit #1 2

Figure 2. Excavation and Sampling Locations for PRS C-00-036(b),
Borrow Pit #2 9

Figure 3. Excavation and Sampling Locations for PRS C-00-036(c),
Borrow Pit #3 17

Figure 4. Excavation and Sampling Locations for PRS C-00-036(d),
Borrow Pit #4 22

Figure 5. VCA Location for PRS 09-010(a), Waste Container Storage Area 26

Figure 6. VCA Location for PRS 09-010(b), Waste Container Storage Area 30

FINAL REPORT

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(a)
Borrow Pit #1**

**Environmental Restoration Project
Field Unit 1
Los Alamos National Laboratory**

September 12, 1995

**A Department of Energy
Environmental Cleanup Project**

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(a)
Borrow Pit #1**

DESCRIPTION

The Potential Release Site C-00-36(a) is located on Bandelier National Monument (BNM) land southwest of State Route 4. The National Park Service (NPS) manages BNM. The rectangular site is approximately 420 feet long by 130 feet wide and covers about 1.25 acres. The site is directly accessible by foot from State Route 4. The pit floor slopes gently and is sparsely vegetated with pine trees and shrubs. Three separate waste piles, two of asphalt and one of concrete, as well as widely scattered debris were present.

Potential Release Site (PRS) was originally excavated as a borrow area for the improvement of State Route 4. The site contained what appeared to be primarily construction debris consisting of asphalt, concrete, pieces of metal, cans, and corrugated metal pipe (CMP). This site is not included in the Hazardous and Solid Waste Amendments Module of the Los Alamos National Laboratory's (Laboratory) Resource Conservation and Recovery Act Permit, EPA I.D. NM0890010515.

Much of the identified waste appeared to be construction debris from grade and drainage improvements and from road resurfacing during the 1950s. No materials specifically associated with Laboratory operations have been identified; no radiological activity above background levels was observed during site reconnaissance in 1993 nor during the Voluntary Corrective Action (VCA).

CORRECTIVE ACTION

The cleanup followed the approved VCA Plan, but with the following deviations. The representative of the NPS requested that the site not be seeded. A modified confirmatory sampling plan was implemented, which added analyses for semi-volatile organic compounds (SVOC) and eliminated analysis for polychlorinated biphenyls (PCB). SVOC analysis was added to identify any contamination by polycyclic aromatic hydrocarbons that may have leached from the asphalt. PCB analysis was eliminated because during the execution of the VCA, the site did not evidence any staining that would potentially indicate the presence of PCB-containing oil. In addition, there is no documentation indicating that electrical equipment (e.g., capacitors, transformers) was managed at this site. Cleanup began on July 19th and ended on July 20, 1995.

Confirmatory sampling was performed (Figure 1) to verify site cleanup. Analytical results and their comparison with the preliminary remediation goals (PRG) are presented in Table 1. Associated field screening data are available and will be

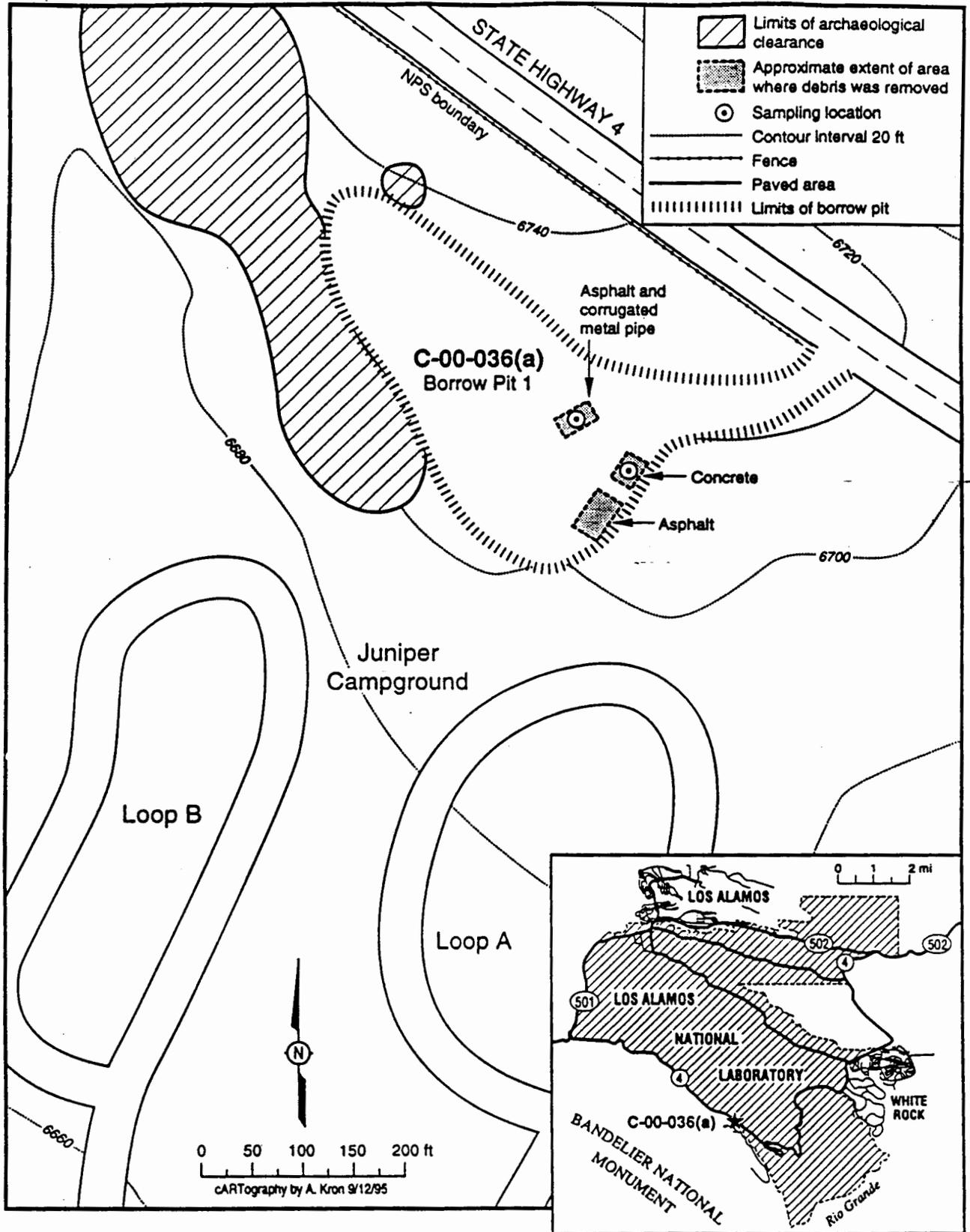


Figure 1. Excavation and sampling locations for PRS C-00-036(a), Borrow Pit 1.

Table 1. Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(a), Borrow Pit #1

Analyte	Loc ID	Sample ID	Matrix	Sample Value	Units	Depth (in.)	Analysis Qualifier
Acenaphthene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Acenaphthene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				4.89E+04	MG/KG		
Anthracene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Anthracene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.44E+04	MG/KG		
Benzo(a)anthracene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Benzo(a)anthracene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+01	MG/KG		
Benzo(a)pyrene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Benzo(a)pyrene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+00	MG/KG		
Benzo(b)fluoranthene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Benzo(b)fluoranthene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+01	MG/KG		

J = The analytical result is estimated quantity.

U = Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.

Table 1. Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(a), Borrow Pit #1 (continued)

Analyte	Loc ID	Sample ID	Matrix	Sample Value	Units	Depth (in.)	Analysis Qualifier
Benzo(k)fluoranthene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Benzo(k)fluoranthene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+02	MG/KG		
2-Chloronaphthalene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
2-Chloronaphthalene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				6.52E+04	MG/KG		
Dibenzo(a,h)anthracene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Dibenzo(a,h)anthracene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+00	MG/KG		
Fluoranthene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Fluoranthene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				3.20E+04	MG/KG		
Fluorene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Fluorene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				3.20E+04	MG/KG		

J = The analytical result is estimated quantity.

U = Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.

Table 1. Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(a), Borrow Pit #1 (continued)

Analyte	Loc ID	Sample ID	Matrix	Sample Value	Units	Depth (in.)	Analysis Qualifier
Indeno(1,2,3-c,d)pyrene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Indeno(1,2,3-c,d)pyrene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+01	MG/KG		
Naphthalene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Naphthalene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				N/A			
Pyrene	00-09000	VCXX-95-0001	SOIL	1.32	MG/KG	0-6	UJ
Pyrene	00-09001	VCXX-95-0002	SOIL	1.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG	2.44E+04			2.44E+04	MG/KG		

J = The analytical result is estimated quantity.

U = Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.

provided upon request. Two surface soil samples were collected on August 10, 1995. One sample was collected from the area beneath the removed concrete and one from beneath the removed asphalt pile to the north. Samples were analyzed for gross alpha and beta by EPA method 900, for gross gamma and gamma spectroscopy by EPA method 901.1, SVOCs by SW-846 method 8270, and TCLP metals by SW-846 method 1311.

All analytical results are below the PRG levels applicable to verification of cleanup and indicate no detectable, residual contamination is present in the soil at any of the three VCA sites. Cleanup verification was based on analytical results and visual inspection as specified in the VCA Plan.

Because the land is owned and operated by the NPS, the cleanup and site restoration activities were done under the direction of an NPS representative to ensure their satisfaction.

Asphalt, concrete, and metal debris (including a piece of CMP and miscellaneous food—and beverage cans) were excavated in three primary locations using a backhoe and hand-held tools (see Figure 1). The debris was field screened for gross alpha/beta/gamma radioactivity and for volatile organic vapors using hand-held instruments. Field screening did not indicate the presence of volatile organic vapors or radioactivity above background levels.

Upon determination that the materials were not contaminated, they were hauled by dump truck and pickup truck to the Los Alamos County Landfill for disposal. A total of 13.7 tons of concrete, 14.8 tons of asphalt, and 140 pounds of metal debris were disposed of in this manner.

Site restoration was implemented as directed by the NPS representative. The disturbed areas were covered with dead vegetation (e.g., trees, branches, pine cones) to control erosion and to allow the areas to reseed naturally.

On August 23, 1995, the site was inspected by the NPS representative and the VCA was declared complete to the satisfaction of the NPS.

REQUEST FOR DOE CONCURRENCE

This report serves as the formal request for DOE concurrence to approve no further action for this PRS.

CERTIFICATION OF COMPLETION

I certify that all work pertaining to the voluntary corrective action (VCA) C-00-036(a) has been completed in accordance with the Department of Energy-approved VCA plan and entitled **VCA Plan for Potential Release Site C-00-036(a), Borrow Pit #1**. Based on my personal involvement or inquiry of the person or persons who managed this cleanup, a review of all data gathered, and a visit to the site, to the best of my knowledge and belief all criteria of the plan have been met or exceeded. I believe that the completion of this VCA is protective to both human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

GA Allen

Garry Allen
Field Unit One Project Leader
Environmental Restoration Program
Los Alamos National Laboratory

12 Sept 95
Date Signed

FINAL REPORT

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(b)
Borrow Pit #2**

**Environmental Restoration Project
Field Unit 1
Los Alamos National Laboratory**

September 12, 1995

**A Department of Energy
Environmental Cleanup Project**

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(b)
Borrow Pit #2**

DESCRIPTION

The Potential Release Site C-00-36(b) is located on Bandelier National Monument (BNM) land southwest of State Route 4. The National Park Service (NPS) manages BNM. The rectangular site is approximately 300 feet long by 100 feet wide and covers about 0.7 acres. The site is directly accessible from State Route 4. The pit floor slopes gently and is sparsely vegetated with pine trees. Several scattered piles of asphalt, concrete and other debris were present at the site.

Potential Release Site (PRS) was originally excavated as a borrow area for the improvement of State Route 4. The site contained what appeared to be primarily construction debris consisting of asphalt, concrete, and steel cables. This site is not included in the Hazardous and Solid Waste Amendments Module of the Los Alamos National Laboratory's (Laboratory) Resource Conservation and Recovery Act Permit, EPA I.D. NM0890010515.

Much of the identified waste appeared to be from grade and drainage improvements and from road resurfacing during the 1950s. Some materials specifically associated with Laboratory operations were identified during the Voluntary Corrective Action (VCA); no radiological activity above background levels was observed during site reconnaissance in 1993 nor during the VCA.

CORRECTIVE ACTION

The cleanup followed the approved VCA Plan, but with the following deviations. The representative of the NPS requested that the site not be seeded. A modified confirmatory sampling plan was implemented, which added analyses for semi-volatile organic compounds (SVOC) and eliminated analysis for polychlorinated biphenyls (PCB). SVOC analysis was added to identify any contamination by polycyclic aromatic hydrocarbons that may have leached from the asphalt. PCB analysis was eliminated because during the execution of the VCA, the site did not evidence any staining that would potentially indicate the presence of PCB-containing oil. In addition, there is no documentation indicating that electrical equipment (e.g., capacitors, transformers) was managed at this site. Cleanup began on July 14 and ended on July 17, 1995.

Confirmatory sampling was performed (Figure 2) to verify site cleanup. Analytical results and their comparison with the preliminary remediation goals (PRG) are presented in Table 2. Associated field screening data are available and will be

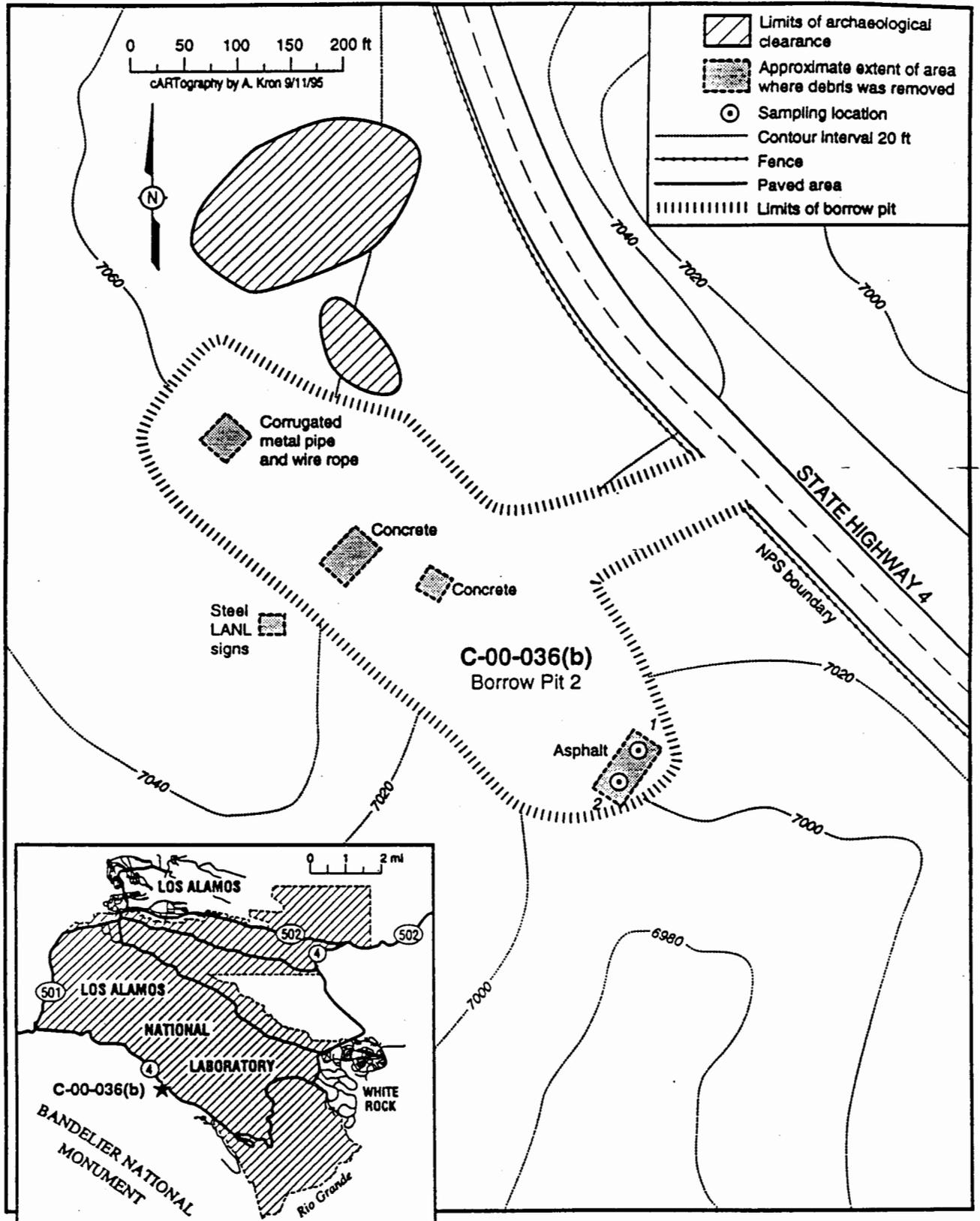


Figure 2. Excavation and sampling locations for PRS C-00-036(b), Borrow Pit 2.

TABLE 2. Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(b), Borrow Pit #2

Analyte	Loc ID	Sample ID	Matrix	Sample Value	Units	Depth (in.)	Analysis Qualifier
Acenaphthene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Acenaphthene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				4.89E+04	MG/KG		
Anthracene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Anthracene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.44E+04	MG/KG		
Benzo(a)anthracene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Benzo(a)anthracene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+01	MG/KG		
Benzo(a)pyrene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Benzo(a)pyrene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+00	MG/KG		
Benzo(b)fluoranthene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Benzo(b)fluoranthene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+01	MG/KG		
Benzo(k)fluoranthene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Benzo(k)fluoranthene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U

J = The analytical result is an estimated quantity.

U = Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.

TABLE 2. Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(b), Borrow Pit #2 (continued)

Analyte	Loc ID	Sample ID	Matrix	Sample Value	Units	Depth (in.)	Analysis Qualifier
95% UCL of Mean				ND			
PRG				2.19E+02	MG/KG		
2-Chloronaphthalene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
2-Chloronaphthalene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				6.52E+04	MG/KG		
Dibenzo(a,h)anthracene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Dibenzo(a,h)anthracene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+00	MG/KG		
Fluoranthene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Fluoranthene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				3.20E+04	MG/KG		
Fluorene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Fluorene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				3.20E+04	MG/KG		
Indeno(1,2,3-c,d)pyrene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Indeno(1,2,3-c,d)pyrene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.19E+01	MG/KG		

J = The analytical result is an estimated quantity.

U = Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.

TABLE 2. Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(b), Borrow Pit #2 (continued)

Analyte	Loc ID	Sample ID	Matrix	Sample Value	Units	Depth (in.)	Analysis Qualifier
Naphthalene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Naphthalene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				N/A			
Pyrene	00-09004	VCXX-95-0010	SOIL	3.31	MG/KG	0-6	U
Pyrene	00-09005	VCXX-95-0011	SOIL	3.31	MG/KG	0-6	U
95% UCL of Mean				ND			
PRG				2.44E+04	MG/KG		

J = The analytical result is an estimated quantity.

U = Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.

provided upon request. Two surface soil samples were collected on August 10, 1995 from the area beneath the removed asphalt. Samples were analyzed for gross alpha and beta by EPA method 900, for gross gamma and gamma spectroscopy by EPA method 901.1, SVOCs by SW-846 method 8270, and TCLP metals by SW-846 method 1311.

All results are below the PRG levels applicable to verification of cleanup and indicate no detectable, residual contamination is present in the soil. Cleanup verification was based on analytical results and visual inspection as specified in the VCA Plan.

Because the land is owned and operated by the NPS, the cleanup and site restoration activities were done under the direction of an NPS representative to ensure their satisfaction.

Asphalt, concrete, and metal debris (including a piece of corrugated metal pipe, wire rope, and two metal Laboratory manhole structure signs (TA-41-22 and TA-41-23) were excavated in five primary locations using a backhoe and hand-held tools (see Figure 2). The debris was field screened for gross alpha/beta/gamma radioactivity and for volatile organic vapors using hand-held instruments. Field screening did not indicate the presence of volatile organic vapors or radioactivity above background levels.

Upon determination that the materials were not contaminated, they were hauled by dump truck and pickup truck to the Los Alamos County Landfill for disposal. A total of 12.5 tons of concrete/asphalt, and 540 pounds of metal debris were disposed of in this manner.

Site restoration was implemented as directed by the NPS representative. The disturbed areas were covered with dead vegetation (e.g., trees, branches, pine cones) to control erosion and to allow the areas to reseed naturally.

On August 23, 1995, the site was inspected by the NPS representative and the VCA was declared complete to the satisfaction of the NPS.

REQUEST FOR DOE CONCURRENCE

This report serves as the formal request for DOE concurrence to approve no further action for this PRS.

CERTIFICATION OF COMPLETION

I certify that all work pertaining to the voluntary corrective action (VCA) C-00-036(b) has been completed in accordance with the Department of Energy-approved VCA plan and entitled **VCA Plan for Potential Release Site C-00-036(b), Borrow Pit #2**. Based on my personal involvement or inquiry of the person or persons who managed this cleanup, a review of all data gathered, and a visit to the site, to the best of my knowledge and belief all criteria of the plan have been met or exceeded. I believe that the completion of this VCA is protective to both human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

G. R. Allen

Garry Allen
Field Unit One Project Leader
Environmental Restoration Program
Los Alamos National Laboratory

12 Sept 95

Date Signed

FINAL REPORT

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(c)
Borrow Pit #3**

**Environmental Restoration Project
Field Unit 1
Los Alamos National Laboratory**

September 12, 1995

**A Department of Energy
Environmental Cleanup Project**

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(c)
Borrow Pit #3**

DESCRIPTION

The Potential Release Site C-00-36(c) is located on Bandelier National Monument (BNM) land southwest of State Road 4. The National Park Service (NPS) manages BNM. The rectangular site is approximately 380 feet long by 130 feet wide and covers about 1.13 acres. The site is directly accessible from State Route 4. The pit floor is generally flat and separated into two areas by a low transverse ridge that may have been an access ramp into the pit. The floor is sparsely vegetated with pine trees and shrubs. Several piles of debris containing steel cables, crushed pieces of corrugated metal pipe (CMP), and a section of small gauge rail were present at the site.

Potential Release Site (PRS) was originally excavated as a borrow area for the improvement of State Route 4. The site contained what appeared to be primarily construction debris consisting of concrete, wire rope, CMP, and metal rail. This site is not included in the Hazardous and Solid Waste Amendments Module of the Los Alamos National Laboratory's (Laboratory) Resource Conservation and Recovery Act (RCRA) Permit, EPA I.D. NM0890010515.

Much of the identified waste appeared to be from grade and drainage improvements and from road surfacing during the 1950s. The rail may have come from a Laboratory sled apparatus set up at TA-49. No other materials specifically associated with Laboratory operations have been identified; no radiological activity above background levels was observed during site reconnaissance in 1993 nor during the Voluntary Corrective Action (VCA).

CORRECTIVE ACTION

The cleanup followed the approved VCA Plan, but with the following deviations. The representative of the NPS requested that the site not be seeded. A modified confirmatory sampling plan was implemented, which added analyses for total metals and eliminated analysis for polychlorinated biphenyls (PCB). Waste characterization sampling was modified to eliminate analyses for PCBs. Total metal analysis was added to the confirmatory sampling to identify any potential contamination by lead shot. PCB analysis was eliminated from the confirmatory sampling and the waste characterization because during the execution of the VCA, the site did not evidence any staining that would potentially indicate the presence of PCB-containing oil. In addition, there is no documentation indicating that electrical equipment (e.g., capacitors, transformers) was managed at this site. Cleanup began on July 11 and ended on July 13, 1995.

Confirmatory sampling was performed (Figure 3) to verify site cleanup. Analytical results and comparison with the preliminary remediation goals (PRG) are presented in Table 3. Associated field screening data are available and will be provided upon request. Based on a review of the existing data and visual screening, lead shot was presumed to be at the site. Therefore, confirmatory sampling was conducted for lead only. One sample was collected on August 10, 1995 from the soil beneath the former sand backstop. The sample was analyzed for gross alpha and beta by EPA method 900, for gross gamma and gamma spectroscopy by EPA method 901.1, and total metals by SW-846 method 6010.

The results are more than two orders of magnitude below the PRG and below background for lead, indicating no detectable, residual contamination is present in the soil. Cleanup verification was based on analytical results and visual inspection as specified in the VCA Plan.

Because the land is owned and operated by the NPS, the cleanup and site restoration activities were done under the direction of an NPS representative to ensure their satisfaction.

Metal and wood debris (including several pieces of CMP, wire rope, a section of small gauge rail, a small wood table, and two wood posts) were excavated in two primary locations using a backhoe and hand-held tools (see Figure 3). The debris was field screened for gross alpha/beta/gamma radioactivity and for volatile organic vapors using hand-held instruments. Field screening did not indicate the presence of volatile organic vapors or radioactivity above background levels.

Two locations of dirt and rock piles were excavated to ensure that debris was not buried (see Figure 3). After no debris was discovered, the dirt and rock were recontoured to match the surrounding terrain.

Upon determination that the materials were not contaminated, they were hauled by dump truck to the Los Alamos County Landfill for disposal. A total of 1020 pounds of metal and wood debris was disposed of in this manner. A small amount of concrete debris from the radio tower footings was combined with the concrete debris from Borrow Pit #4 for disposal.

Also located on the site was a sand backstop for an impromptu shooting range (see Figure 3). The upper eight to ten inches of sand was segregated into three 55-gallon drums. The sand was suspected of being contaminated with lead shot. Samples were taken from each drum in order to characterize the waste. Based on preliminary evaluation, the waste does not appear to contain radioactivity above Laboratory site-wide background levels, nor does it contain metals above RCRA regulatory concentrations. The drums, currently stored at TA-33, are awaiting disposal at the Los Alamos County Landfill.

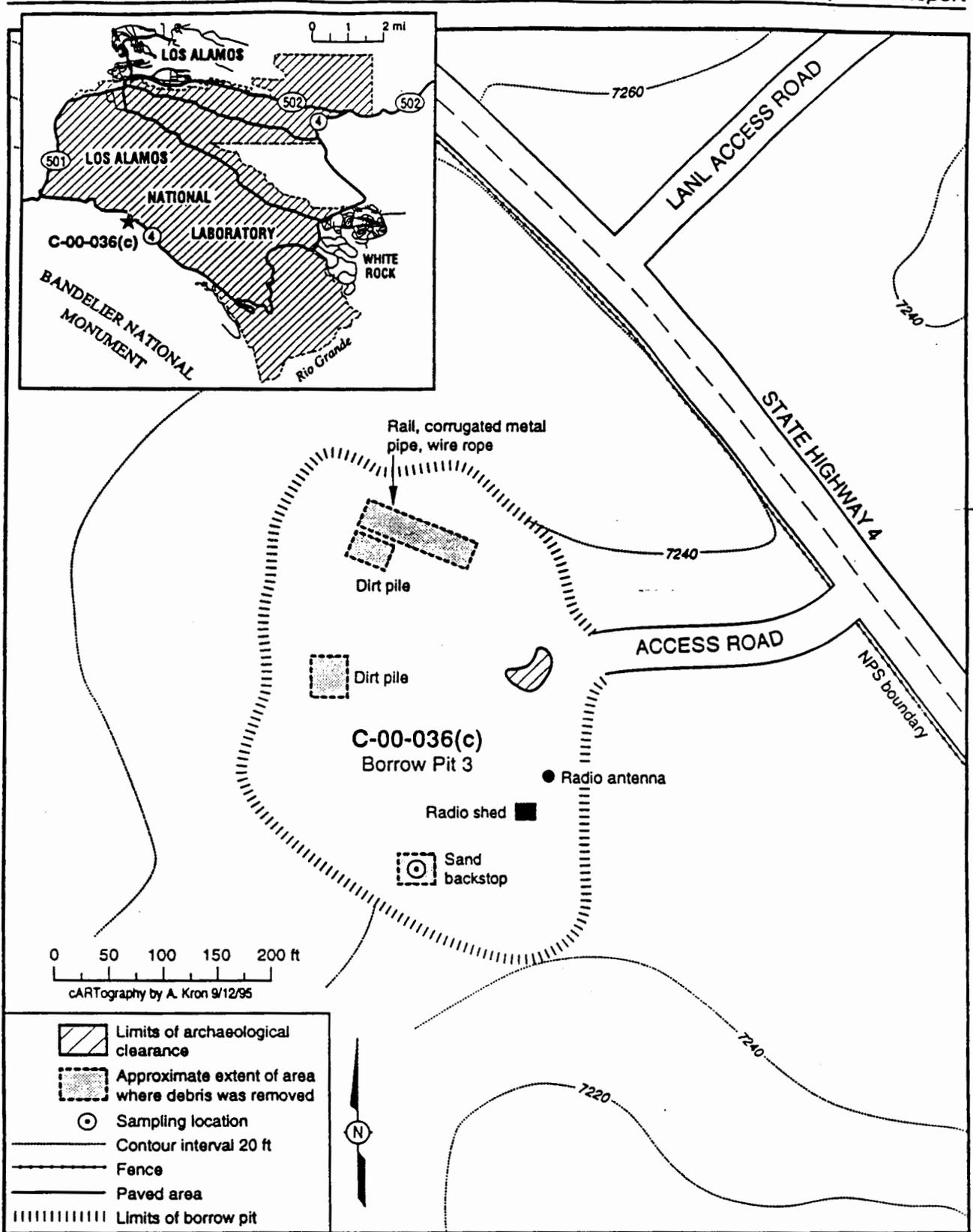


Figure 3. Excavation and sampling location for PRS C-00-036(c), Borrow Pit 3.

TABLE 3. Summary of Analytical Results and Data Comparison, Potential Release Site C-00-036(c), Borrow Pit #3

Analyte	Loc ID	Sample ID	Matrix	Sample Value	Units	Background Level	Background Units	Depth (in.)	Analysis Qualifier
Lead	00-09008	VCXX-95-0019	SOIL	15	MG/KG	39	MG/KG	0-6	None
95% UCL of Mean (Max)				15					
PRG				1.8E+03					

J = The analytical result is an estimated quantity.

U = Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.

Site restoration was implemented as directed by the NPS representative. The disturbed areas were covered with dead vegetation (e.g., trees, branches, pine cones) to control erosion and to allow the areas to reseed naturally.

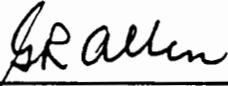
On August 23, 1995, the site was inspected by the NPS representative and the VCA was declared complete to the satisfaction of the NPS.

REQUEST FOR DOE CONCURRENCE

This report serves as the formal request for DOE concurrence to approve no further action for this PRS.

CERTIFICATION OF COMPLETION

I certify that all work pertaining to the voluntary corrective action (VCA) C-00-036(c) has been completed in accordance with the Department of Energy-approved VCA plan and entitled **VCA Plan for Potential Release Site C-00-036(c), Borrow Pit #3**. Based on my personal involvement or inquiry of the person or persons who managed this cleanup, a review of all data gathered, and a visit to the site, to the best of my knowledge and belief all criteria of the plan have been met or exceeded. I believe that the completion of this VCA is protective to both human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.



Garry Allen
Field Unit One Project Leader
Environmental Restoration Program
Los Alamos National Laboratory

12 Sept 95

Date Signed

FINAL REPORT

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(d)
Borrow Pit #4**

**Environmental Restoration Project
Field Unit 1
Los Alamos National Laboratory**

September 12, 1995

**A Department of Energy
Environmental Cleanup Project**

**Voluntary Corrective Action Plan Completion Report
Potential Release Site C-00-036(d)
Borrow Pit #4**

DESCRIPTION

The Potential Release Site C-00-36(d) is located on Bandelier National Monument (BNM) land southwest of State Route 4. The National Park Service (NPS) manages BNM. The rectangular site is approximately 175 feet long by 15 to 20 feet wide and covers about 0.1 acre. The site is directly accessible from State Route 4. The pit floor is nearly flat and sparsely vegetated with pine trees and shrubs. Several crushed pieces of corrugated metal pipe (CMP), as well as several cubic yards of concrete were in the area. The concrete was deposited as a slurry and formed a ribbon down a steeply inclined drainage channel that exists at the site.

Potential Release Site (PRS) was originally excavated as a borrow area for the improvement of State Route 4. The pit contained what appeared to be primarily construction debris consisting of CMP. This site is not included in the Hazardous and Solid Waste Amendments Module of the Los Alamos National Laboratory's (Laboratory) Resource Conservation and Recovery Act (RCRA) Permit, EPA I.D. NM0890010515.

The identified waste appeared to be from grade and drainage improvements and from road surfacing during the 1950s. No materials specifically associated with Laboratory operations have been identified; no radiological activity above background levels was observed during site reconnaissance in 1993 nor during the Voluntary Corrective Action (VCA).

CORRECTIVE ACTION

The cleanup deviated from the VCA Plan as follows. The NPS representative requested that the site not be seeded. The analyses for polychlorinated biphenyls and toxicity characteristic leaching procedure metals were eliminated based on field screening and visual inspection of the debris pile before, during, and after removal operations. The site did not evidence any staining that would potentially indicate the presence of PCB-containing oil. In addition, there is no documentation indicating that electrical equipment (e.g., capacitors, transformers) was managed at this site. Since there was no indication that RCRA constituents were present, no confirmatory sampling was done. Cleanup began on July 13 and ended on July 14, 1995.

The location of the VCA is shown in Figure 4. One surface soil sample was collected on August 1, 1995, from the area beneath the removed concrete for radiological analysis. The sample was analyzed for gross alpha and beta by EPA method 900,

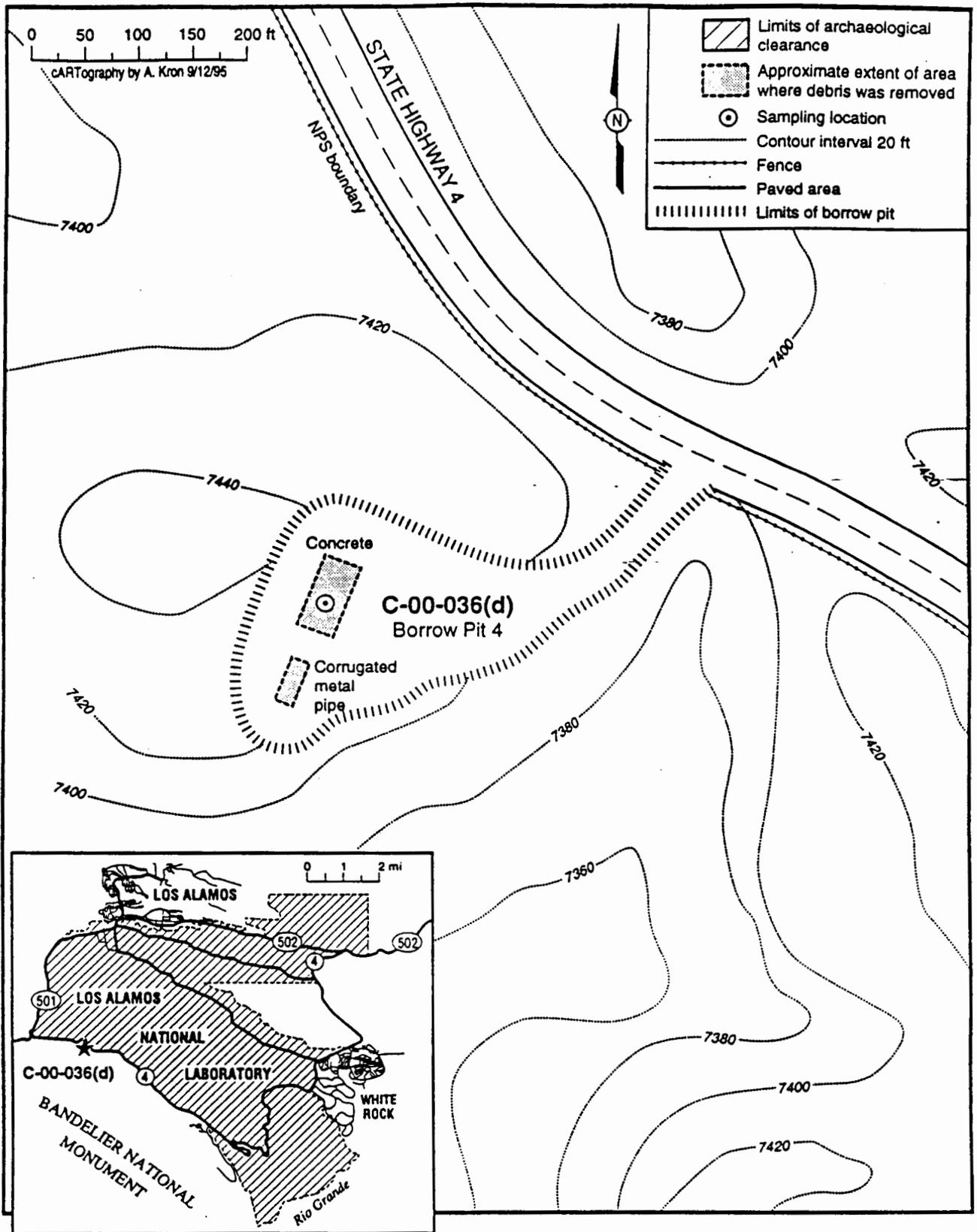


Figure 4. Excavation and sampling location for PRS C-00-036(d), Borrow Pit 4.

and for gross gamma and gamma spectroscopy by EPA method 901.1. All analytical and field screening data are available and will be provided upon request.

Because the land is owned and operated by the NPS, the cleanup and site restoration activities were done under the direction of an NPS representative to ensure their satisfaction.

Concrete and metal debris (including several pieces of CMP and wire rope) were excavated in two primary locations using a backhoe and hand-held tools. The debris was field screened for gross alpha/beta/gamma radioactivity and for volatile organic vapors using hand-held instruments. Field screening did not indicate the presence of volatile organic vapors or radioactivity above background levels.

Upon determination that the materials were not contaminated, they were hauled by dump truck and pickup truck to the Los Alamos County Landfill for disposal. A total of 9.7 tons of concrete and 800 pounds of metal debris were disposed of in this manner.

Site restoration was implemented as directed by the NPS representative. The disturbed areas were covered with dead vegetation (e.g., trees, branches, pine cones) to control erosion and to allow the areas to reseed naturally.

On August 23, 1995, the site was inspected by the NPS representative and the VCA was declared complete to the satisfaction of the NPS.

REQUEST FOR DOE CONCURRENCE

This report serves as the formal request for DOE concurrence to approve no further action for this PRS.

CERTIFICATION OF COMPLETION

I certify that all work pertaining to the voluntary corrective action (VCA) C-00-036(d) has been completed in accordance with the Department of Energy-approved VCA plan and entitled **VCA Plan for Potential Release Site C-00-036(d), Borrow Pit #4**. Based on my personal involvement or inquiry of the person or persons who managed this cleanup, a review of all data gathered, and a visit to the site, to the best of my knowledge and belief all criteria of the plan have been met or exceeded. I believe that the completion of this VCA is protective to both human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.



Garry Allen
Field Unit One Project Leader
Environmental Restoration Program
Los Alamos National Laboratory

12 Sept 95

Date Signed